

51 – UPPER FREEHOLD TOWNSHIP

PLANNING TEAM AND PARTICIPATION

Name	Title	Participation
James Rosenbauer	OEM Coordinator	Point of Contact, Municipal Meeting, 11/6/2024
Dana Tyler	Municipal clerk	Municipal meeting, 1/23/25
Sal Fiorinzo	DPW Manager	Meting 1/3/25

COMMUNITY PROFILE

Overview

Located in the far western section of the county's Panhandle region, the Township of Upper Freehold has a land area of 47.45 square miles. Upper Freehold is a primarily agricultural and residential community with limited commercial development.

Assessed farmland encompasses nearly 60 percent of the township's total acreage. Roughly 33 percent of the county's active agricultural acres, including cropland and permanent pasture, is located within Upper Freehold. The township reached a milestone of preserving 10,000 acres of agricultural land in 2018. Upper Freehold ranks second in the number of acres of farmland preserved in the State.

Land Use, Development, & Growth

In Upper Freehold, farmland covers nearly half of its area, while other land uses make up its remaining land base. However, from 2015 to 2020, the Township lost nearly 156 acres of its farmland. It also lost 77 acres of its barren land and nearly 10 acres of wetlands. Meanwhile, its urban land grew by 198 acres and forested land rose by 44 acres. In 2020, agricultural land accounted for 46 percent of the Township's total area, while wetlands and forested land made up 21 percent and 16 percent respectively of its land base. In the same year, urban or developed land constituted

Land Use Type	Total Acres (2015)	Total Acres (2020)	Percent Change
Agriculture	13995.1	13839.4	-1%
Barren Land	132.1	54.9	-58%
Forest	4901.4	4945.7	1%
Urban	4427.2	4625.3	4%
Water	599.7	599.8	>0%
Wetlands	6261.8	6252.1	>0%

Source: NJDEP Land Use/Land Cover data, 2015-2020

Recent Major Development and Infrastructure from 2020 to Present

Several projects in scattered pockets have been approved but none have moved forward because of the economic situation.

Known or Anticipated Major Development and Infrastructure in the Next Five (5) Years

A 472,757 square foot warehouse application has been proposed at 1662 Old York Road [Route 539]. The application is currently still under review by the Monmouth County Development Review Committee. Although the warehouse will not be located in Upper Freehold, truck traffic due to the warehouse will affect the Township.

Demographics & Vulnerable Populations

This plan analyzed census-derived data on population trends and population age distributions to help illustrate potential vulnerability within the township. A population increase or decrease can illustrate potential hazard vulnerability through development pressures on the built environment, or through physical and social impacts of marked population loss. A community with a large share of population under age five may indicate vulnerabilities in hazard response, resource allocation, and evacuation – FEMA identifies that the pediatric population is disproportionately affected during disasters, and requires special consideration in categories of anatomy and physiology, psychological, and education vulnerabilities (FEMA, 2022, NLM, 2022). Individuals over age 65 are a growing share of the country’s population and often represent the greatest share of deaths from extreme weather events and other natural disasters. A larger share of population over 65 may indicate local vulnerabilities to hazard events both before and after a disaster occurs – these populations may have mobility needs, uneven access to resources, and limited social networks that makes pre-disaster engagement challenging (FEMA, 2023).

The Township of Upper Freehold has an estimated population of 7,244. Of Upper Freehold residents, an estimated 4.0% are under age 5, and 23.5% are over age 65. The Township experienced an estimated 5.0% growth over the periods between 2013-2017 and 2018-2022 ACS surveys. With an aging population making up nearly twenty-four percent of their total community, Upper Freehold may focus hazard mitigation efforts on those with robust messaging and engagement for older residents, evacuation plans inclusive of populations with mobility issues, and resilient networks for resource accessibility post-disaster. A five percent population growth over two five-year periods may illustrate additional vulnerability to hazards rooted in local built environment shifts (see development plans, above) and changing hazard impacts.

There are no areas of Upper Freehold which have been identified by CDRZ, CEJST, or OBC designation criteria.

Demographics Summary	
Total Population (2018-2022 ACS 5-year Estimates)	7,244
Population Change since 2017	5.0%
Percent of Population Age < 5	4.0%
Percent of Population > 65	23.5%

Source: 2018-2022 ACS 5-Year Estimates, 2013-2017 ACS 5-Year Estimates

HAZARD IDENTIFICATION

One of the first steps in developing a risk assessment is for participating municipalities to review and prioritize the hazards that can affect them. This was done based on how often a hazard has occurred, how significant effects have been in the past, the difficulty and cost of recovering from such events. Jurisdictions ranked the list of hazards as either high, medium, low, or no concern. The following include the Borough’s hazard ranking. The full risk assessment for each hazard is located in Section 4.0.

Hazard Ranking

High	Medium	Low
Natural Hazards		
Tropical Storm	Extreme Temperatures	Dam Failure
Nor’easter	Extreme Wind	Earthquake
Flood	Tornado	Wildfire
	Nor’easter	
	Winter Storm	
	Drought	
	Coastal Erosion	
	Wave Action	
	Lightning	
Human-made Hazards		
	Cyber Attack	Civil Unrest

High	Medium	Low
Natural Hazards		
	Economic Disruption	
	Terrorism	
	Pandemic	
	Power Failure	

The Township ranked Landslide and Storm Surge as N/A.

Hazard Ranking Explanation

Extreme temperatures: When temperatures rise beyond a certain threshold, cooling centers for seniors are opened. For instance, during the summer of 2023, there was an extreme heat event that led to the town opening the firehouse for seniors.

Lightning: This is considered a high risk because two homes were hit by lightning. Additionally, the Township's soil is rich in iron, making it more prone to lightning strikes.

Dam failure: The Imlaystown Lake (Class 2 dam) and another Class 4 dam are nearby, but they do not pose a significant risk.

Earthquake: An earthquake occurred in early 2024, but no damage was reported.

Wildfire: Although no wildfires have been experienced within the Township, wildfires in adjacent towns such as Jackson can affect Upper Freehold. The Township has dry ground, several parks, and forested areas, which increases the danger of wildfires spreading.

Drought: During droughts, the Township sends Nixle alerts. However, it is challenging to get people to comply with warnings, especially during parties when people want to use fire pits.

Economic disruption: Storms could impact the Township's economy.

Power failure: Power outages have been caused by animals, falling trees, and car accidents.

Significant Hazard Events Since Last Plan Update

Two tornadoes hit Upper Freehold in June and July of 2021, respectively. One tornado was ranked EF0, while the other was ranked EF1. Although the livability of houses was not affected, there was some damage to trees and cars, along with cosmetic damage to buildings. Flooding is also a concern when there is rainfall beyond two inches, causing creeks and streams to overflow and only gradually subside. Such flooding has occurred three times since the summer of 2024, typically affecting areas by 539 and Holmes Mill Road near the historic Walnford area. Province Line Road, Waln's Mill Road, Iron Bridge, and two other bridges near Waln's Mill Road are also prone to flooding.

Although there have been no wildfires in Upper Freehold so far, neighboring Jackson experienced a wildfire in 2024, and North Jersey had two to three wildfires. Black skies could be seen from Upper Freehold through August. These wildfires affected the particulate matter concentration and overall air quality in the Township, with smoke and haze occurring in its jurisdiction.

Climate Change Impacts on Extent and Magnitude of Hazards

Climate change is expected to significantly impact the risks and hazards faced by Upper Freehold Township. As global temperatures rise, the frequency and intensity of extreme weather events such as heatwaves, storms, and heavy rainfall are likely to increase. This will exacerbate existing hazards like flooding, which has already been a concern for the

Township. With more intense rainfall, creeks and streams are more likely to overflow, leading to more frequent and severe flooding events. Additionally, the Township's agricultural lands, which make up a significant portion of its area, may face increased drought conditions, affecting crop yields and water availability.

Moreover, climate change can lead to higher temperatures and prolonged dry periods, increasing the risk of wildfires. Although Upper Freehold has not experienced wildfires within its borders, neighboring areas have, and the Township's dry ground and forested areas make it susceptible to wildfire spread. The Township's air quality could also be impacted by smoke and haze from wildfires in nearby regions. Furthermore, the increased frequency of extreme weather events can lead to more power outages and economic disruptions, affecting the Township's overall resilience and quality of life.

RISK ASSESSMENT

National Flood Insurance Program (NFIP) statistics

Upper Freehold Township	
Initial FIRM Date	10/12/79
Effective FIRM Date	9/25/2009
Number of Policies In-Force:	9
Total Losses:	3
Total Payments:	\$11,545.13
Number of RL Properties:	0
Number of Mitigated RL Properties:	0
RL – Total Losses:	0
RL – Total Paid:	\$0
Number of SRL Properties:	0
Number of Mitigated SRL Properties:	0
SRL – Total Losses:	0
SRL – Total Paid:	\$0

Source: FEMA Policy and Loss Data, August 2024

Vulnerability of the Built Environment

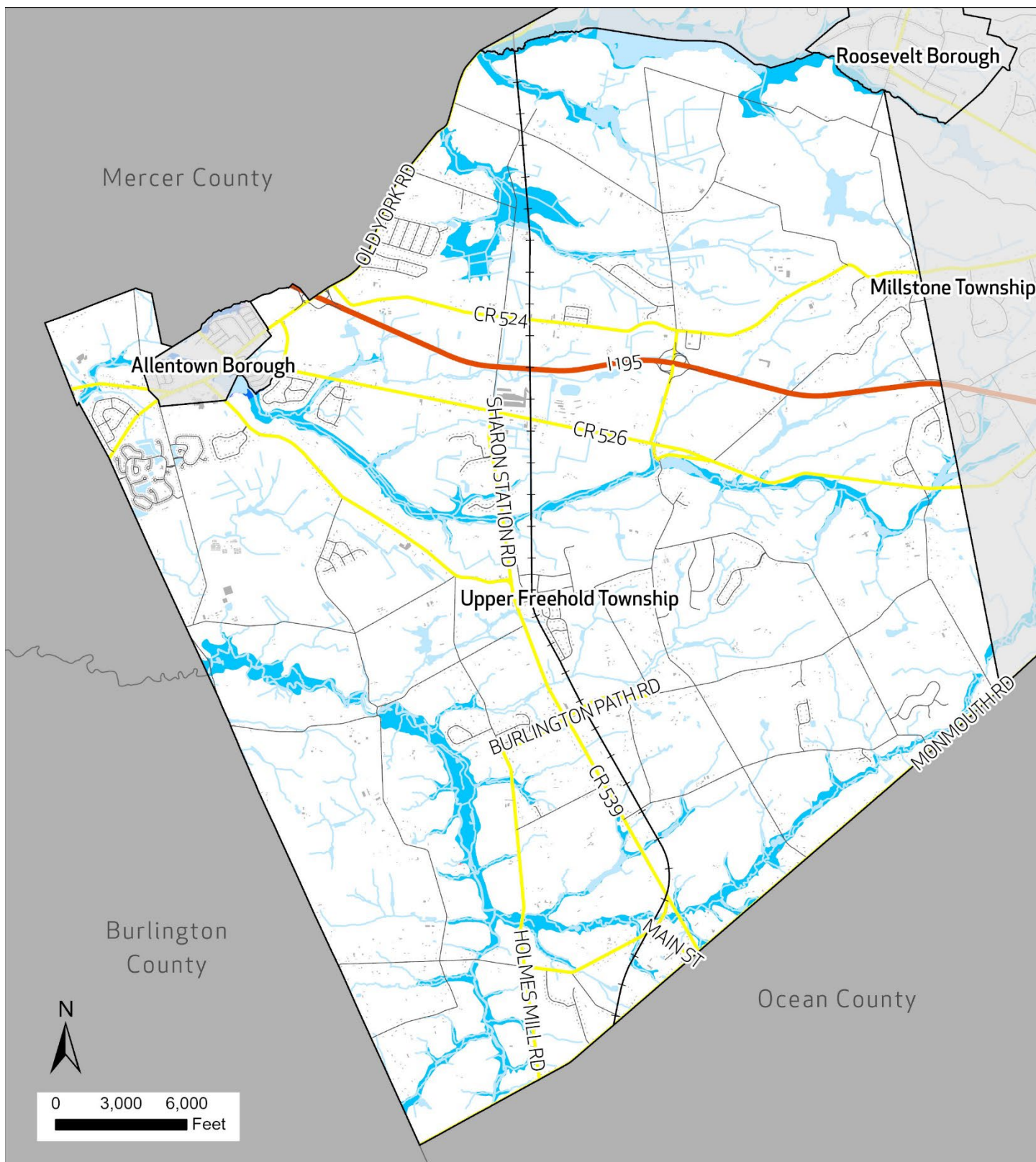
The entire Borough is in the 1% Floodplain, however the dune system protects the ocean side of Barnegat Light. The Special Flood Hazard Area (SFHA) in the Township of Upper Freehold is primarily located adjacent to the many streams which flow through town. Approximately 7.1 percent of the total area of Upper Freehold lies within the 1% annual chance flood zone as defined by FEMA. An additional 0 percent of the area of the municipality is in the 0.2% annual chance flood zone.

About 65.6 percent of Upper Freehold is considered developed. Of the developed parcels of the town, 9.9 percent fall within the 1% annual chance flood zone and 0.1 percent are within the 0.2% annual chance flood zone. This illustrates that development in of the municipality has generally occurred in areas that are more prone to flooding.

	Percentage in the 1% Floodplain	Percentage in the 0.2% Floodplain	5 feet of Sea Level Rise
Developed Parcels	9.9%	NA	NA
Exposed Land Area	7.1%	NA	NA

During the planning process, Upper Freehold identified critical facilities which function as community lifelines. These facilities provide the most fundamental services in the community that, when stabilized, enable all other aspects of society to function. The municipality identified 40 total facilities. Of these facilities, 9 are within the 1% floodplain.

Community Lifeline Type	Number in the 1% Floodplain	Number in the 0.2% Floodplain	Number within 5 feet of Sea Level Rise
Safety and Security	1	NA	NA
Water Systems	8	NA	NA



Flood Risk

Upper Freehold Township

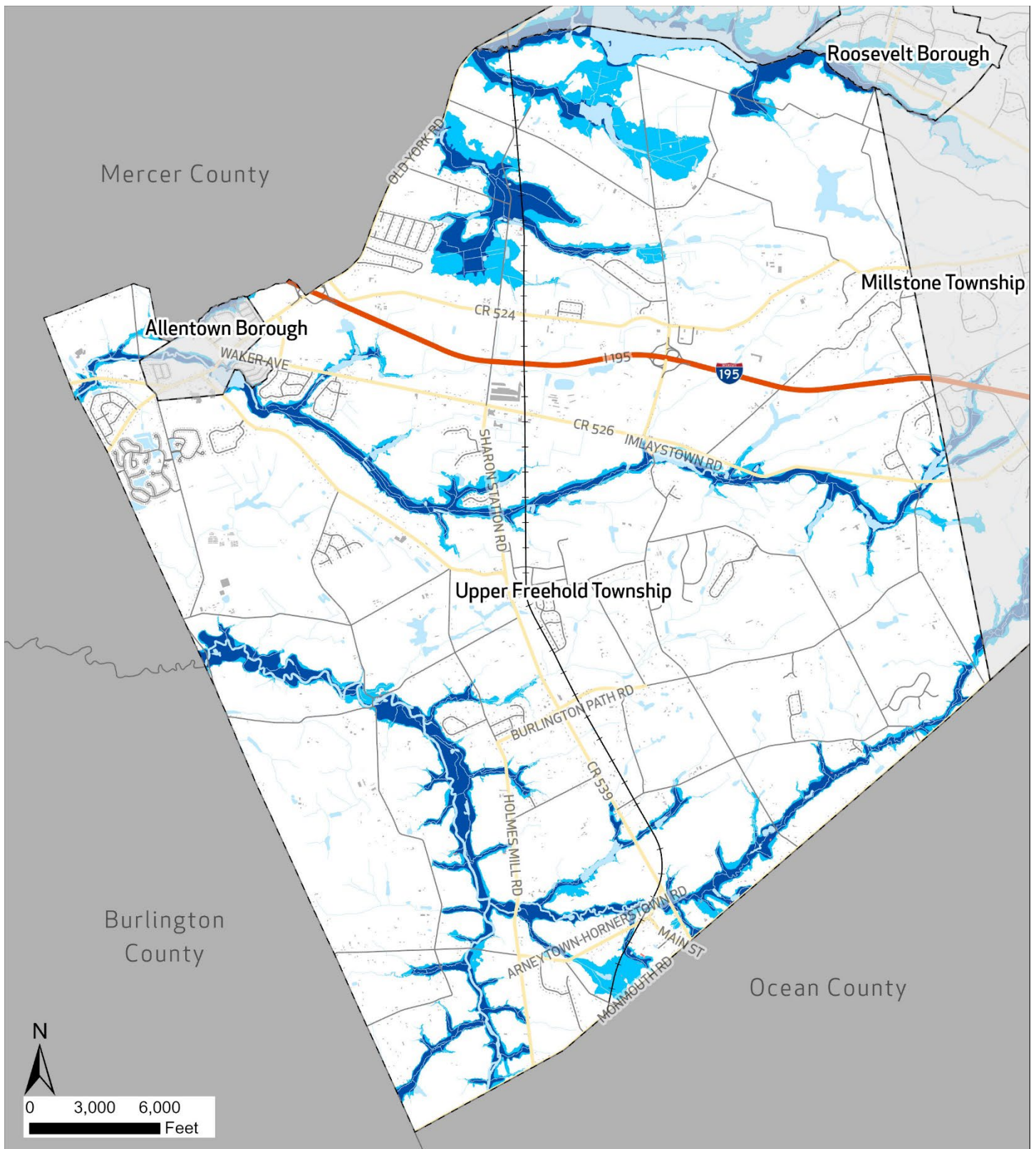
FEMA Flood Zone

- 0.2% Annual Chance
- A (1%)
- AE (1%)

- Interstate Highways
- County Routes
- Local Roads
- Rail Lines

- Municipal Boundaries
- Building Footprints
- Building Footprints within Floodplain
- Water

Source: FEMA NJDEP, NJOIT, NJTransit



NJ Inland Design Flood Elevation Upper Freehold Township

FEMA Flood Zone

Current Base Flood
Elevation (1%)

**NJ Inland Design Flood
Elevation**

FEMA BFE (1%) plus 3
Feet

Interstate Highways

County Routes

Local Roads

Railroad

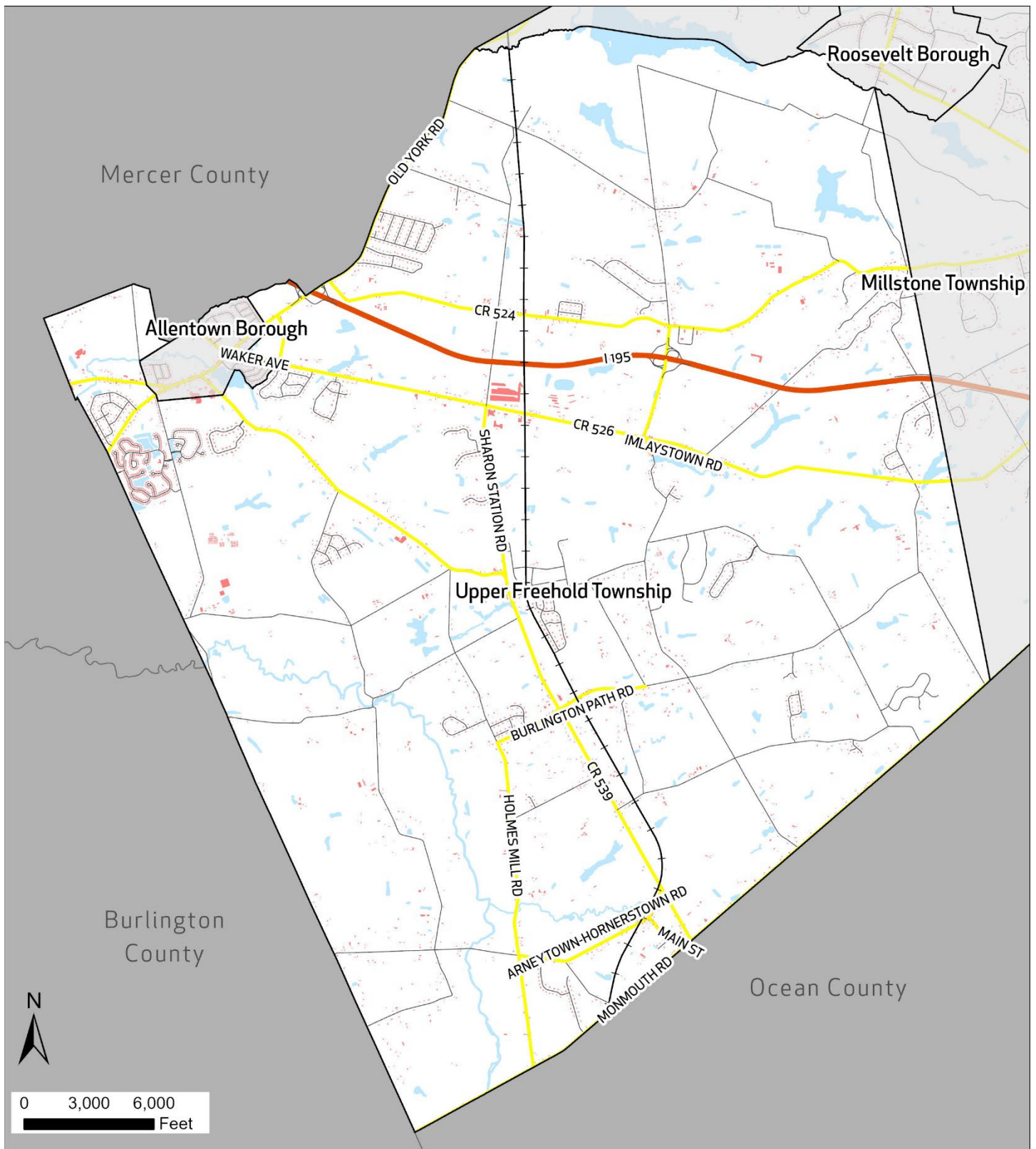
Municipal Boundaries

Water

Building Footprints

Building Footprints within
IDFE

Source: FEMA, Rutgers University, NJDEP, NJOIT, NJTransit



Permanent Inundation Under Sea Level Rise (SLR) Scenarios

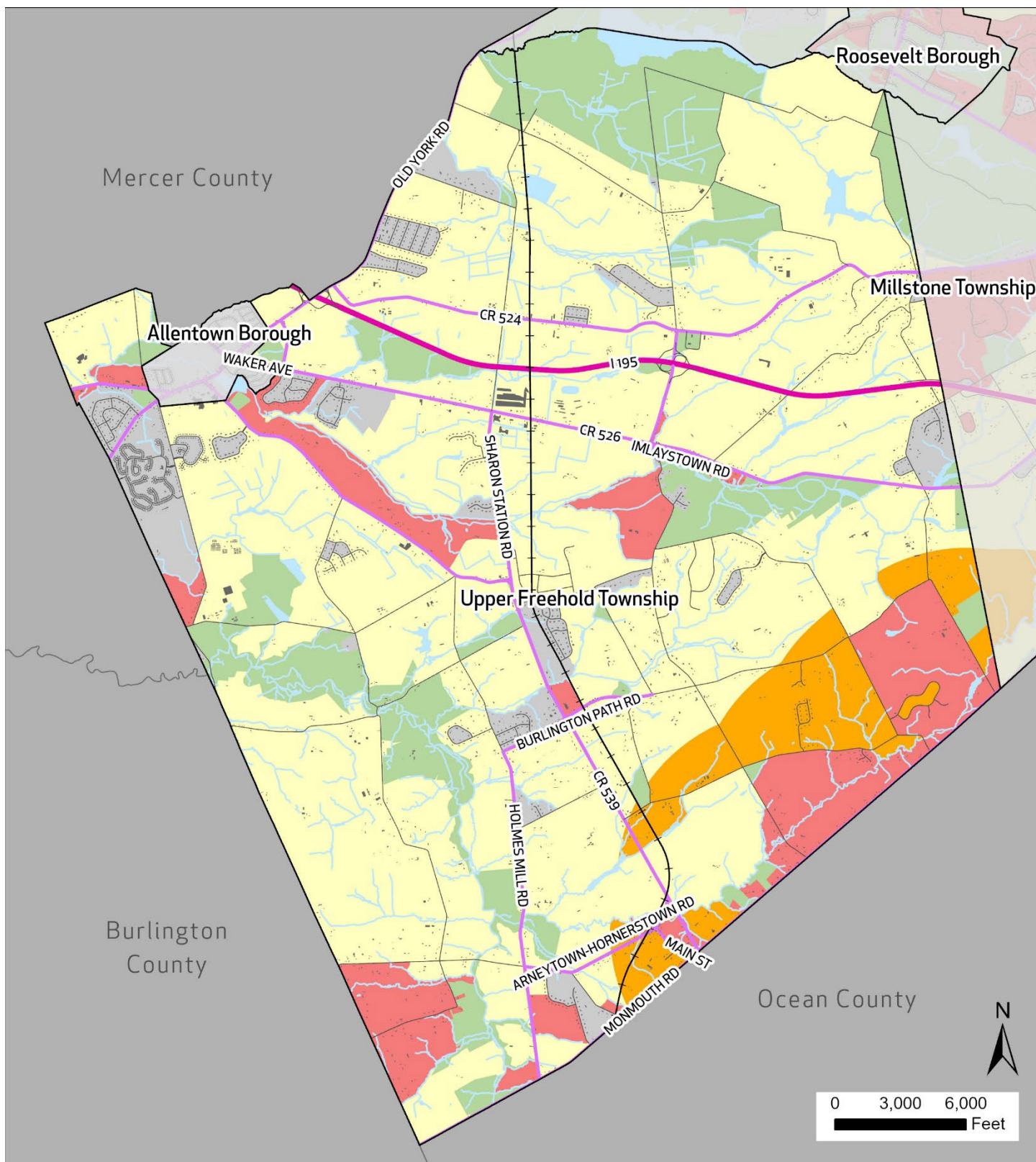
Upper Freehold Township

- Area Inundated Under 2 Feet SLR
- Area Inundated Under 3 Feet SLR
- Area Inundated Under 5 Feet SLR

- Interstate Highways
- State Routes
- County Routes
- Local Roads
- Rail Lines

- Municipal Boundaries
- Building Footprint
- Water

Source: NOAA, NJDEP, NJOT, NJTransit



Wildland Urban Interface (WUI) Classification

Upper Freehold Township

- | | | |
|--|---|---|
| Interface | Interstate Highways | Municipal Boundaries |
| Intermix | County Routes | Building Footprint |
| High or Medium Density Housing | Local Roads | Water |
| Low or Very Low Density Housing | Rail Lines | |
| No Housing | | |

Source: USFS, NJDEP, NJOIT, NJTransit

CAPABILITY ASSESSMENT

Planning & Regulatory Capabilities

Upper Freehold Township has the following additional Planning & Regulatory capabilities:

Plan and Regulation	Yes	No	Date of last update	How does this capability support hazard mitigation?
Master Plan	X		2017	Allows for sustainable growth and standards
Capital Improvement Plan		X		No major projects are planned
Local Emergency Operations Plan/Continuity of Operations Plan	X		12/1/24	Mitigation of natural disasters. Provides for efficient response and recovery from natural disasters and continuity of government.
Floodplain Development Ordinance	X		2020	Restricts construction and development in flood prone areas
Floodplain Management Plan		X		Local maintenance of stream bed and flood prone areas has reduced the need for a management plan
Stormwater Management Ordinance	X			Identifies risk free lands for development to mitigate flooding
Stormwater Management Plan		X		N/A
Watershed Management Plan		X		N/A
Sheltering Plan	X		6/1/2020	Establishes temporary housing for displaced residents. Agreements with County for sheltering.
Evacuation Plan	X		6/1/2020	Identifies safe routes and provides guidance for evacuation.
Substantial Damage/Improved Structures Response	X		2023	Reconstruction and repair of damages bridges was completed
Repetitive Loss Plan		X		N/A
Disaster Debris Management Plan	X		2020	Notification to residents of the location and procedures for debris removals. DPW staff trained on removal of debris from any disaster.
Tracking elevation certificates and/or Letter of Map Change		X		N/A
Post-Disaster Recovery Plan	X		12/1/2024	Emergency Management basic plan lists the steps for recovery
Current/recent redevelopment plans or studies	X		2020	On going review by the planning board to set standards for development,
Community Wildfire Protection Plan	X		2000	Fire company procedures for controlled burns to prevent wildfire
Climate Adaptation Plan		X		N/A
Other Plans that discusses hazard mitigation		X		None at this time
Other ordinance and regulation that mitigate the impacts of natural hazards	X		6/23/20	Hazard mitigation plan updated

Administrative and Technical Capabilities

Barnegat Light Borough has the following Administrative and Technical capabilities:

Position	Yes	No	Explanation
Floodplain Administrator		X	N/A
Grant Writer		X	None
Staff trained to support mitigation	X		Quarterly municipal meetings.
Existing mutual aid or technical assistance agreements to support hazard mitigation projects	X		A mutual aid agreement between Upper Freehold and other municipalities as well as with Monmouth County.
Non-governmental organizations/other partners that work with the municipality on mitigation projects		X	None at this time
Organizations that work with socially vulnerable or underserved populations	X		Food Pantry (Allentown Presbyterian Church) and MEALS ON WHEELS-Allentown and UFT

Education and Outreach Capabilities

Upper Freehold has the following Education and Outreach capabilities:

Education & Outreach Capability	Yes	No	Explanation
Communicate natural and human-based hazards to the public	X		Nixle alerts by text and web messages. Municipal web page alerts are posted
StormReady	X		Partner with National Weather service for training and assistance
Firewise USA		X	N/A
Severe Weather Awareness Week	X		Information for public awareness of severe weather hazards
Community Rating System (CRS)		X	

Financial Capabilities

Within the last five years, Upper Freehold has used the following financial capabilities to implement hazard mitigation activities:

Financial Capability	Yes	No	Explanation
FEMA BRIC		X	N/A
FEMA FMA		X	Minor flooding in the Township has been mitigated by Municipal DPW
FEMA Public Assistance	X		Restored community infrastructure after Hurricane Irene.
FEMA HMGP		X	Upper Freehold plans to explore grant opportunities for risks from climate change
Non-FEMA Federal Funding Programs		X	None at this time
Other FEMA resources		X	None at this time
NJ Infrastructure Bank		X	N/A
Other state municipal assistance or grant programs		X	None
Evaluation process on the prioritization of risk reduction projects against other local activities		X	The planning and zoning boards analyze natural hazards for future development.
Other ongoing efforts to build additional financial capabilities		X	None

MITIGATION STRATEGY

Overview and Progress Since Last Plan Update

Upper Freehold Township is a rural farming community with a commitment for open space and preservation of our natural resources. In addition, there are numerous horse farms in Upper Freehold Township. The Horse Park of New Jersey is located within our Township.

Upper Freehold has established a Right-to-Farm Ordinance and provides support for Future Farmers of America. The Upper Freehold Country Code provides a framework for our commitment to preserve our lands and forests; to improve our resilience to natural disasters and to mitigate the effects of climate change. This initiative has begun by restricting high density zoning regulations thereby providing more open land for natural drainage during excessive rainfall events. Going forward more work is needed to lessen the impacts of climate change.

Damage from lightning can be mitigated by installing lightning rods on critical facilities and installing surge protection on all electrical equipment. Educational materials for the public can be sent with the municipal tax bill; posted on the municipal web page and OEM Facebook. Lightning safety is currently taught in science classes at the Middle School.

Completed or Removed Actions

Action	Name	Description	Hazards Addressed	Pri- ority	Responsible Party	Potential Funding	Cost Estimate	Time-line	Action Status	Notes
51-01	Continue to Provide Hazard Education and Risk Awareness	Ongoing development of education materials for distribution on the Township website and the OEM Facebook portal as well as print materials. Emergency notifications will be made as necessary via the Township's emergency notification system.	All Hazards	N/A	Emergency Management Coordinator, Office of Emergency Management	Local budget and personnel are able to maintain & further develop this mitigation.	Staff time	N/A	Completed	<i>OEM Facebook routinely used to post safety messages. The municipal web page is used to provide education on hazards</i>
51-02	Improve Drainage System Capacity	Seasonal cleanup of culverts, roadside water management ditches, and drainage basins in flood prone areas.	Flood	N/A	Department of Public Works	Local budget and personnel are able to maintain & further develop this mitigation.	\$25,000	N/A	Completed	DPW annually cleans culverts and underpasses.

New and Ongoing Actions

Action	Name	Description	Hazards Addressed	Pri- ority	Responsible Party	Potential Funding	Cost Estimate	Time-line	Action Status	Notes
51-03	Acquire, elevate, or relocate buildings and	Meet with local zoning board to raise awareness of repetitive flood loss and meet with home	Flood, Nor'easter	Low	Emergency Management Coordinator,	FEMA HMA, County funding	TBD	1 year	Ongoing	There are only three RL/SRL properties in the Township. Low priority.

Action	Name	Description	Hazards Addressed	Pri-ority	Responsible Party	Potential Funding	Cost Estimate	Time-line	Action Status	Notes
	infrastructure in flood prone areas, with a focus on Repetitive Loss (RL) and Severe Repetitive Loss (SRL) properties	& property owners with repetitive loss due to flooding to identify mitigation options and seek input to develop a strategy (i.e., elevation, acquisition).	Hurricane and Tropical Storm		Office of Emergency Management					
51-04	Identify and Remove Hazardous Trees	Identify trees and/or tree limbs with the potential to cause loss of life, property damage, utility loss or road closure. Advise property owners of potential hazards and where appropriate, engage community resources, and/or utility company resources.	Extreme Wind	Medium	Public Works	Municipal budget, JCP&L Utility	\$25,000	1 year	Ongoing	Tree service contractors remove dangerous trees. Power company trim trees affecting their power lines
51-05	Create a Wildfire Inventory of Potential At-Risk Properties and Develop an Alerting System to Notify Those Residents	Develop an inventory of addresses that could be affected by a wildfire. Use inventory and develop a route alerting system. Identify property owners for focused outreach, education & awareness of wildfire hazards.	Wildfire	Medium	DPW	Municipal budget	\$5,000	1 year	Ongoing	Forests and open grassy fields have been plotted and an evacuation route has been established
51-06	Coordinate with the County on Clearing Sediment and Debris at Bridges U-15 Breza Rd. and U-52 Ellisdale Rd.	Coordinate with the County on cleaning the sediment, debris, and fallen trees which block waterways at bridges U- 15 Breza Road and U-52 Ellisdale Road.	Flood, Nor'easter , Hurricane and Tropical Storm	Medium	Township and Monmouth County	Municipal and County budget	Staff time	1 year	Ongoing	<i>Upper Freehold OEM communicates with County DPW for assistance in clearing debris and sediment at county bridges and roads</i>
51-07	Clear Sediment and Debris at Bridges U-53, U-47, and U-48	Roadway bank protection at Bridge U-53 Provinceline Road; and Bridges U-47 & U-48 Walnsmill Road. Since Upper Freehold does not have jurisdiction over these county bridges, our action will be to meet with the County advise	Flood, Nor'easter , Hurricane and Tropical Storm	Medium	Township and Monmouth County	Local budget and personnel are able to maintain & further develop this mitigation.	\$1,000	1 year	Ongoing	Any identified culverts and streams that require clearing of debris is completed

Action	Name	Description	Hazards Addressed	Pri-ority	Responsible Party	Potential Funding	Cost Estimate	Time-line	Action Status	Notes
		them of the issues we have observe.								
51-08	Purchase and Install Generators for the Municipal Building and the First Aid Building	New generators for the Municipal Building and the First Aid Building.	All Hazards	Medium	Township	FEMA HMA	\$35,000	1 year	Ongoing	<i>Budget constraints has affected purchase of generators. Grants will be investigated</i>
51-09	Repair, Remove, or Rehabilitate the Assunpink #4 Dam (Lake Assunpink)	Repair, remove, or rehabilitate the Assunpink #4 Dam, a High-Hazard Potential Dam, located on the Assunpink Creek.	Dam Failure	High	NJDEP Division of Fish and Wildlife	NJDEP Bureau of Dam Safety and Flood Control	TBD, not in report	5 years	Ongoing	Emergency Action Plan developed in December 2017. The dams in Upper Freehold are a low risk. There is minimal risk to the environment or the public if a dam fails.
51-10	Create a Plan to Manage Development in Landslide Hazard Areas	Create a plan to implement reinforcement measures in high-risk areas.	Landslide	Low	Township	Municipal funding	Staff time	3 years	Ongoing	<i>Zoning and Planning board identifies hazardous areas.</i>